METROPLEX
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September 12, 1995

Mr. William F. Caton, Acting Secretary

Office of the Secretary

Federal Communications Commission

1919 M Street, N.W.

Washington, D.C. 20554

RE: Comments on PR Docket Number 92-235, Refarming Report and Order and Further Notice of Proposed Rule making.

Dear Mr. William F. Caton,

Metroplex Mobile Data was incorporated on April 9, 1991 in Florida by its officers, William L. Ford and Lawrence A. Gould. Mr. Gould had been instrumental in the development, manufacture and sale of complex data communications systems to law enforcement agencies while Mr. Ford had extensive experience with the start-up operations of the successful cellular telephone system licensee in the Miami, Florida Metropolitan Standard Statistical Area.

Metroplex Mobile Data, Inc. integrates remote station computers, two-way radios and centralized data information networks with customized software which enables dispersed, mobile computers within the

system to communicate with each other as well as with a considerable number of data base networks without the need for inter-connecting wiring. Metroplex Mobile Data, Inc.'s present efforts are largely focused on serving the needs and expanding the capabilities of dispersed mobile police and public safety forces in both rural and dense metropolitan applications. Metroplex Mobile Data, Inc. intends to pursue a variety of other, disparate applications of its wireless mobile data system.

Metroplex Mobile Data, Inc. was formed for the purpose of developing a wireless wide-area data communications network technology applied to the specialized needs of various agencies. Predominant among them the patrol force of law enforcement agencies and public safety operations such as fire fighters, emergency medical services and others. Metroplex Mobile Data, Inc. perceived a need for a sophisticated data communications system in which mobile elements could communicate with dispatch operations and various data bases. The data bases can be within or beyond the agency's territory. The communications is real-time. There are no paper reports and significant delays in data entry or information access. During its research and development phase, Metroplex Mobile Data, Inc. designed and assembled a computer-based systems approach to that market operated by customized software tailored to the unique needs, demands and characteristics of the client agency. Metroplex Mobile Data, Inc.'s resulting systems approach uses off-the-shelf hardware, equipment and components operated by proprietary, customized software which addresses the prior deficiencies of the two-way voice radio systems generally used by such agencies in the conduct of their 24-hour operations.

With Metroplex Mobile Data, Inc.'s law enforcement system, patrol units are equipped with in-vehicle terminals which provide field forces with immediate, direct access to a large variety of databases, records and other information systems. In the case of suspected stolen vehicles for instance, the field

patrol can search and retrieve motor vehicle records in motion in real-time to aid the officer's decision making process at the critical point of contact. In another application,
patrol officers can electronically file incident and day reports from the vehicle and secure back-up and collateral information on the in-vehicle monitor in the process, at the time. In a fire fighting application, where the database is in place, a field officer can search and retrieve building descriptions, egress and ingress details of a given structure and details of in-building operations, stored materials and known hazards to fire fighters. In the opposite direction, metropolitan inspectors can input fire details, structural updates, in-building operations modifications and file paper-less reports on the spot, in real-time from the field location.

Similar advantages and features are presented by Metroplex Mobile Data, Inc.'s system in other applications involving a dispersed, mobile field force operating in everything from a small population, rural environment to a dense, metropolitan area. Metroplex Mobile Data, Inc.'s system permits simultaneous, duplex (or two-way) data and voice communication without channel-busy delay and without awaiting attendant voice response from the distant end. Dispatchers can broadcast generic or all-unit messages and instructions simultaneously. Field officers can file paper-less reports with the agency's central information retrieval system at the same time without waiting. Message storage and retrieval functions are provided when field or central staff personnel are unavailable for direct communication. Unit location information is continuously available to central dispatch and electronic operations monitoring of unique variables is available for management control and statistical analysis.

Unlike many companies who have elected to pursue the wireless connection of local area networks (LANs), Metroplex has instead chosen to focus on the market for data radio networks

that provide wide-area connectivity to public safety, service, education and manufacturing sectors. These types of networks often have requirements for higher throughput and greater flexibility than can otherwise be obtained from the more generic data radio systems that are deployed by common carriers.

Metroplex's specific interest is in the data portion of "PR Docket Number 92-235, Refarming Report and Order and Further Notice of Proposed Rule making" is in IV. Report and Order, E. Technical Parameters, (7) Spectrum Efficiency Standards, section #97. Decision, which states, "we (FCC) are adopting a spectrum efficiency standard of one voice channel per 12.5 KHz of channel bandwidth for equipment type accepted after August 1, 1996, and a spectrum efficiency standard of one voice channel per 6.25 KHz for equipment type accepted after January 1, 2005. Additionally, after August 1, 1996, equipment designed for data operation that uses more than a 6.25 KHz channel bandwidth, must meet a minimum efficiency standard of at least 0.768 bits per second per Hertz. At the chosen standard of 0.768 bps/Hz, the 6.25 KHz equipment will have a data rate of 4800 bps, and the 12.5 KHz equipment will have a data rate of 9600 bps. These are standard data rates. Based on the comments, we (FCC) believe that this standard is readily attainable."

Metroplex believes that a system of 0.384 bits per second per Hertz can actually be more efficient than the "chosen standard of 0.768 bps" in real world applications. First we would like to express that a complex modulation scheme such as a four-level FSK modem will have to have additional demands on protocol handling such as Symbol and Frame Synchronization, Block Formatting (Station ID, Header, Intermediate and Last), Forward Error Correction, CRC Check and

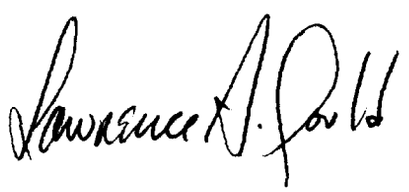
Generation and interleaving. With this modulation technique, inter-symbol distortion, multipath and signal to noise ratio will all have to be near ideal conditions in order to overcome the overhead necessary to be as efficiency of a simpler modulation scheme with less overhead and retries for the same information. What we are looking at with the Commissions Decision is that the "standard rate/hertz" is arbitrary in that it is a channel data rate and not a throughput data rate. If you need twice the overhead, FEC, Interleaving and retries per given bps channel rate, the efficiencies gained in the channel rate are negated in real throughput of information. Metroplex Mobile Data, Inc. feels it is like trying to share a bag of potato chips with a friend if you only have one serving. Just taking the bag of chips and breaking the chips into more parts does not necessarily create enough chips to double the amount of food.

Furthermore, utilizing the "FCC standard data rate" modems, the reduction of coverage for a given amount of radiation power because of a significant change in signal to noise ratios, will require additional transmitter sites or an increase in effective radiated power (ERP) for coverage of the same geographic area without additional retries of transmissions. This is particularly important with mobile units traveling at various speeds with large fluctuations in signal strength and multi-path distortion.

Additionally, in "**IV. Report and Order, E. Technical Parameters, (2) Power/Antenna Height Limits, #69, decision**", this will compound a situation of less Power/Antenna Height and less sensitive radio modems. If the Commission is convinced that steps must be taken that will permit increased channel reuse, then the Commission might want to consider the efficiency of less complex modems which can get an effective Bit Error Rate (BER) as low as possible into the noise.

In summary, Metroplex Mobile Data, Inc. believes the guidelines proposed by the FCC can be obtained. However, the effective information throughput, the length of time necessary for the information to travel from the sending station to the receiving station, utilizing the FCC guidelines will most likely be lower than what can be accomplished at half the signaling rate with more efficient current non multi-level modulation techniques.

Truly,



Lawrence A. Gould, CEO